

# Global Existence for the $n$ -Dimensional Semilinear Tricomi-Type Equations

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In the talk we discuss the issue of global existence of the solutions of the Cauchy problem for semilinear Tricomi type equations. We give some sufficient conditions for existence of the global weak solutions. These conditions tie together nonlinearity with the speed of propagation and with the dimension  $n > 1$ . We also prove necessity of these (or close) conditions. In fact, we extend these necessity results to the nonlocal semilinear equations. In particular, we discuss the question of existence of self-similar solutions of Tricomi-type equations.